



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

**MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION**

11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786)315-2590 F (786) 31525-99

www.miamidade.gov/economy

Firestone Building Products Company, LLC
250 East 96th Street
Indianapolis, IN 46240-3702

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami Dade County) and/or the AHJ (in areas other than Miami Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code including the High Velocity Hurricane Zone of the Florida Building Code.

DESCRIPTION: Firestone Modified Bitumen Roof Systems over Concrete Decks.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA No.10-1230.05 and consists of pages 1 through 92.

The submitted documentation was reviewed by Jorge L. Acebo.



NOA No.: 11-0119.11
Expiration Date: 03/08/16
Approval Date: 04/25/13
Page 1 of 92

ROOFING SYSTEM APPROVAL

Category: Roofing
Sub-Category: Modified Bitumen
Material: APP/SBS
Deck Type: Concrete
Maximum Design Pressure: -547.5 psf

TRADE NAMES OF PRODUCTS MANUFACTURED OR LABELED BY APPLICANT:

TABLE 1

Product	Dimensions	Test Specification	Product Description
APP 80 Glass Base	39.4" x 65'4"	ASTM D6509	Fiberglass reinforced modified bitumen, smooth surfaced base sheet.
SBS Glass Torch Base	39.4" x 33'10"	ASTM D6163	Modified bitumen base sheet with a burn-off film and reinforced with non-woven fiberglass mat.
SBS Base	39.4" x 50'	ASTM D6163	Fiberglass reinforced SBS base sheet. Applied in hot asphalt or mechanically attached.
SBS Premium Base	39.6" x 50'	ASTM D6163	Fiberglass reinforced SBS base sheet. Applied in hot asphalt or Multi-Purpose MB Cold Adhesive.
SBS PolyBase	39.6" x 50'	ASTM D6164	A smooth surfaced, non-woven polyester reinforced, modified bitumen base sheet
SBS Poly Torch Base	45" x 39"	ASTM D6164	Fiberglass reinforced modified bitumen membrane, SBS rubber modified asphalt reinforced with a non-woven polyester mat.
Ply IV	33" x 180"	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
Ply VI	33" x 180"	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
Ply IV (4) M	39.4" x 164.5'	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
Ply VI (6) M	39.4" x 164.5'	ASTM D2178	Fiberglass reinforced, asphalt impregnated, roofing ply. Applied in hot asphalt.
MB Base	36" x 108'	ASTM D4601	Fiberglass reinforced base sheet, asphalt coated on both sides. Applied in hot asphalt or mechanically attached.
MB Base M	39.4" x 98.7'	ASTM D4601	Fiberglass reinforced base sheet, asphalt coated on both sides. Applied in hot asphalt or mechanically attached.



Product	Dimensions	Test Specification	Product Description
SBS Smooth	39.4" x 33'10"	ASTM D6164	Smooth surfaced, modified bitumen membrane reinforced with non-woven polyester mat. Applied in hot asphalt.
APP 160-P	39.4" x 32'9"	ASTM D6222	Polyester reinforced modified bitumen, smooth surfaced membrane. Torch applied for use as a base or ply sheet only.
APP 170 Cool	39.6" x 33'6"	ASTM D6222	Polyester reinforced modified bitumen, smooth surfaced membrane.
APP 180	39.4" x 32'10"	ASTM D6222	Polyester reinforced modified bitumen, granule surfaced membrane. Torch applied.
APP 180-P	39.4" x 32'9"	ASTM D6222	Polyester reinforced modified bitumen, granule surfaced membrane. Torch applied.
APP 180 UltraWhite	39.4" x 32'10"	ASTM D6222	Polyester reinforced modified bitumen, UltraWhite granule surfaced membrane. Torch applied.
APP 180 FR	39.4" x 32'10"	ASTM D6222	Polyester reinforced, fire retardant modified bitumen, granule surfaced membrane. Torch applied.
APP 180 FR UltraWhite	39.4" x 32'10"	ASTM D6222	Polyester reinforced, fire retardant modified bitumen, UltraWhite granule surfaced membrane. Torch applied.
APP 180 Cool	39.4" x 32'10"	ASTM D6222	Polyester reinforced modified bitumen, granule surfaced membrane.
APP 180 FR Cool	39.4" x 32'10"	ASTM D6222	Polyester reinforced, fire retardant modified bitumen, granule surfaced membrane. Torch applied.
SBS Glass	39.4" x 33'10"	ASTM D6163	Fiberglass reinforced, granule surfaced, modified bitumen membrane. Applied in hot asphalt.
SBS Glass FR		ASTM D6163	Fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. Applied in hot asphalt.
SBS Glass FR UltraWhite		ASTM D6163	UltraWhite fiberglass reinforced, granule surfaced, modified bitumen membrane. Applied in hot asphalt.
SBS Torch	48" x 39"	ASTM D6164	Granule surfaced, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced

Product	Dimensions	Test Specification	Product Description
SBS Torch UltraWhite	48" x 39"	ASTM D6164	UltraWhite granule surfaced, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced
SBS FR Torch	48" x 39"	ASTM D6164	Granule surfaced, fire rated, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced
SBS FR Torch UltraWhite	48" x 39"	ASTM D6164	UltraWhite granule surfaced, fire rated, SBS cap reinforced with a non-woven polyester mat, with burn off film and fiberglass enhanced
SBS Glass FR Torch		ASTM D6163	Fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. with burn off film and fiberglass enhanced
SBS Glass FR Torch UltraWhite		ASTM D6163	UltraWhite fiberglass reinforced, fire rated, granule surfaced, modified bitumen membrane. with burn off film and fiberglass enhanced
SBS Cap	39.4" x 33'10"	ASTM D6164	Granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Cap UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS FR Cap	39.4" x 33'10"	ASTM D6164	Granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS FR Cap UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Premium FR	39.4" x 33'10"	ASTM D6164	Granule surfaced, fire rated, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Premium FR UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, fire rated, modified bitumen membrane reinforced with non-woven polyester mat.
SBS Premium	39.4" x 33'10"	ASTM D6164	Granule surfaced, modified bitumen membrane reinforced with polyester mat. Applied in hot asphalt.
SBS Premium Torch	39.4" x 33'10"	ASTM D6164	Granule surfaced, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.

Product	Dimensions	Test Specification	Product Description
SBS Premium Torch UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.
SBS Premium FR Torch	39.4" x 33'10"	ASTM D6164	Granule surfaced, fire rated, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.
SBS Premium FR Torch UltraWhite	39.4" x 33'10"	ASTM D6164	UltraWhite granule surfaced, fire rated, modified bitumen membrane with a burn-off film and reinforced with non-woven polyester mat.
I.S.O. Twin Pack Insulation Adhesive	Dual 750 ml cartridges	Proprietary	A two-component polyurethane insulation adhesive.
I.S.O. FIX II	30 lb.	Proprietary	A single component polyurethane insulation adhesive.
I.S.O. Stick	5 gal.	Proprietary	A two-component polyurethane insulation adhesive.
Multi-Purpose MB Cold Adhesive	55 gal.	Proprietary	An asphalt based adhesive.
LiquiGard Membrane Adhesive	6 gal.	Proprietary	A two-component, solvent-free, asphalt-based urethane adhesive.
SA Primer	5 gal.	Proprietary	Polymer based primer.

APPROVED INSULATIONS:

TABLE 2

Product Name	Product Description	Manufacturer (With Current NOA)
ACFoam-II	Isocyanurate Insulation	Atlas Roofing Corp.
ISO 95+ GL, RESISTA	Isocyanurate Insulation	Firestone Building Products Company, LLC
FiberTop E	Regular wood fiber insulation	Firestone Building Products Company, LLC
DensDeck, DensDeck Prime	Silicon treated gypsum	Georgia-Pacific Gypsum LLC
ENRGY 3, ENRGY 3 25 PSI	Isocyanurate Insulation	Johns Manville Corp.
High Density Wood Fiberboard	High Density Wood Fiber insulation board.	Generic
Perlite Insulation Board	Perlite Insulation	Generic
Multi-Max-3	Isocyanurate Insulation	Rmax Operating, LLC
SECUROCK Gypsum-Fiber Roof Board	Gypsum Coverboard	United States Gypsum Corporation

APPROVED FASTENERS:**TABLE 3**

Fastener Number	Product Name	Product Description	Dimensions	Manufacturer (With Current NOA)
1.	Firestone All-Purpose	Insulation and membrane fastener	Various	Firestone Building Products Company, LLC
2.	Firestone Heavy-Duty	Insulation and membrane fastener	Various	Firestone Building Products Company, LLC
3.	Firestone Concrete Drive	1/4" diameter concrete deck fastener.	Various	Firestone Building Products Company, LLC
4.	MB 2" Barbed Metal Seam Plate	Metal plates used for membrane securement.	2" dia	Firestone Building Products Company, LLC
5.	Firestone 2-3/8 Barbed Seam Plate	Membrane seam attachment plate.	2-3/8" dia	Firestone Building Products Company, LLC
6.	2" Metal Plate	Membrane attachment plate.	2" dia	Firestone Building Products Company, LLC
7.	#14 & #15 HS Dekfast Fasteners	Insulation and membrane fastener	Various	SFS Intec, Inc.
8.	Dekfast Galvalume Steel Hex Plate	Insulation and membrane fastener	Various	SFS Intec, Inc.
9.	#12 & #14 Roofgrip	Insulation and membrane fastener	Various	OMG, Inc.
10.	3" Round Metal Plate	Galvalume AZ50 stress plate	3" square 3" round	OMG, Inc.
11.	OMG Fasteners #14 & #15	Insulation and membrane fastener	Various	OMG, Inc.
12.	OMG 3 in. Round Metal Plates	Galvalume AZ55 stress plate	3" round	OMG, Inc.
13.	OMG Plastic Plate	Plastic plates for fasteners.	3" round	OMG, Inc.
14.	Trufast Fasteners	Insulation and membrane fastener	Various	Altenloh, Brinck & Co. U.S., Inc.
15.	Trufast 3" Metal Insulation Plate	Galvalume AZ50 steel plate	3.23" round	Altenloh, Brinck & Co. U.S., Inc.
16.	Insulation Fastening Plate	Insulation plate for use with Firestone Fasteners	3" round	Firestone Building Products Company, LLC
17.	Trufast #14 HD Fastener	Insulation and membrane fastener	Various	Altenloh, Brinck & Co. U.S., Inc.
18.	Dekfast Galvalume Steel 3 in. Round	Galvalume AZ50 stress plate	3" round	SFS Intec, Inc.

EVIDENCE SUBMITTED:

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
FM Approvals	1D5A8.AM	FM 4470	09/09/98
	3003597	FM 4470	07/14/99
	3004786	FM 4470	05/16/00
	3005030	FM 4470	08/08/00
	3014031	FM 4470	07/22/02
	3022502	FM 4470	01/29/07
	3030227	FM 4470	06/18/07
	3007328	FM 4470	07/12/02
	3012321	FM 4470	07/29/02
	3014692	FM 4470	08/05/03
	3033218	FM 4470	08/04/10
	3035017	FM 4470	08/04/10
	3031943	FM 4470	09/25/09
	3033921	FM 4470	08/04/10
	3030107	FM 4470	12/24/09
	3009613	FM 4470	03/03/11
	3028093	FM 4470	03/03/11
	3040795	FM 4470	03/24/11
	3041534	FM 4470	03/09/11
	3042392	FM 4470	06/08/11
	3035560	FM 4470	01/11/10
	3038191	FM 4470	08/04/11
	3040306	FM 4470	09/07/11
Underwriters Laboratories	R9516	UL 790	01/25/13
Trinity ERD	48101.96-1	TAS 114(C) & TAS 114(D)	01/31/96
	4810.10.96-1-R1	TAS 114-J	03/09/09
	F880018-R1	TAS 114	04/21/08
	F1037058	ASTM C 1289	05/08/08
	F10500.108-1	ASTM D6163	08/26/08
	F319605.10-1	ASTM D4977	05/19/10
	F319605.10-2	ASTM D4977	05/19/10
	F319608.10-1	ASTM D4977	08/25/10
	F319608.10-2	ASTM D4977	08/25/10
	F354005.11	ASTM Physical Properties	05/31/11
	F410708.12	ASTM D6222	08/24/12
	U41790.05.12-2-R2	ASTM D6222	02/11/13
	U41790.05.12-1-R1	ASTM D6222	01/21/13
IRT-ARCON, Inc.	02-010, 02-011	TAS 114	01/28/02
Atlantic & Caribbean Roof Consulting, LLC.	03-002	TAS 114	03/06/03
PRI Construction Materials Technologies LLC	FBP-018-02-01	ASTM D 6163	09/07/04
	FBP-011-02-01	ASTM D 6164	09/02/04

<u>Test Agency</u>	<u>Test Identifier</u>	<u>Description</u>	<u>Date</u>
PRI Construction Materials Technologies LLC	FBP-008-02-01	ASTM D 6222	09/10/04
	FBP-009-02-01	ASTM D 6222	08/31/04
	FBP-010-02-01	ASTM D 6164	09/04/04
	FBP-014-02-01	ASTM D 6164	09/02/04
	FBP-015-02-01	ASTM D 6509	09/02/04
	FBP-016-02-01	ASTM D 6509	09/02/04
	FBP-017-02-01	ASTM D 6163	09/13/04
	FBP-019-02-01	ASTM D 4601	09/14/04
	FBP-023-02-01	ASTM D 6223	09/01/04
	FBP-007-02-01	ASTM D 6222	09/14/04
	FBP-020-02-01	ASTM D 2178	09/14/04
	FBP-038-02-03	ASTM D 6164	01/12/11
	FBP-038-02-04	ASTM D 6164	01/12/11
	FBP-038-02-02	ASTM D 6164	01/12/11
	FBP-038-02-01	ASTM D 6164	12/27/10
	FBP-043-02-03	ASTM D 6164	07/26/11
	FBP-043-02-02	ASTM D 6164	08/02/11
	FBP-043-02-04	ASTM D 6164	07/26/11
	FBP-043-02-01	ASTM D 6164	08/02/11
	FBP-042-02-01	ASTM D 6164	07/26/11
	FBP-042-02-02	ASTM D 6164	07/27/11
	FBP-058-02-01	ASTM D 4601	12/12/08
	FBP-057-02-01	ASTM D 2178	12/12/08
	FBP-056-02-01	ASTM D 2178	12/12/08
	FBP-059-02-01	ASTM D 1876	07/20/12
	FBP-087-02-01	ASTM D 4798	03/22/13
	FBP-088-02-01	ASTM D 4798	03/22/13

APPROVED ASSEMBLIES

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(1): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-25 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone SBS Base or SBS Premium Base sheet fully adhered to the top insulation layer in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq.

Membrane: One ply of Firestone SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet with the 3" sidelaps heat fused with a torch.

Maximum Design

Pressure: -45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(2): One or more layers of insulation adhered with approved adhesive.

All General and System Limitations apply.

Primer: (Optional) Concrete deck primed using ASTM D41 primer

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
RESISTA Minimum 1.5" thick	N/A	N/A
Middle Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
RESISTA Minimum 1.5" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Tapered RESISTA 1/2" start with 1/4" taper	N/A	N/A

Note: Insulation shall be adhered to the deck with I.S.O. Twin Pack Insulation Adhesive applied in 1/2 - 3/4" wide ribbons spaced 12 in. o.c. or with I.S.O. Stick or I.S.O. FIX II applied in 3/4-1" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

System 1: One or more plies of Firestone SBS Base, SBS Premium Base, SBS PolyBase or
Base Sheet: SBS Smooth sheet fully adhered to the insulation with Multi-Purpose MB Cold Adhesive applied at 1 1/2 - 2 gal/sq

Membrane: One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1 1/2 - 2 gal/sq

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

- System 2:
Base Sheet: One or more plies of Firestone APP 80 Glass Base, , MB Base M , SBS Base, SBS PolyBase or SBS Premium Base sheet fully adhered to the insulation with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.
- Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.
- Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following to obtain required fire classification.
1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
 2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.
- Maximum Design
Pressure: -52.5 psf (See General Limitation #9)

Membrane Type: APP/SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(3): One or more layers of insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A

Note: Insulation shall be adhered to the deck with I.S.O. FIX II applied in ¾ in. wide ribbons spaced 8 in. o.c., TITASET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in 3-3½" ribbons spaced 12" o.c. or OlyBond 500 Adhesive or I.S.O. Stick in ¾-1" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

System 1:

Base Sheet: One or more plies of Firestone SBS Base, SBS Smooth, SBS PolyBase or SBS Premium Base sheet fully adhered to the insulation with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Smooth, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

System 2:

Base Sheet: One or more plies of Firestone APP 80 Glass Base, , MB Base M , SBS Base, ,SBS PolyBase or SBS Premium Base sheet fully adhered to the insulation with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure: -67.5 psf (See General Limitation #9)

Membrane Type: APP/SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(4): One or more layers of insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A

Note: Insulation shall be adhered to an ASTM D41 primed deck with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾" wide ribbons spaced 12 in. o.c. or TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in 3-3½" ribbons spaced 12" o.c. or to an unprimed deck with TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in 3-3½" ribbons spaced 12" o.c. or OlyBond 500 Adhesive or I.S.O. Stick in ¾-1" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone APP 80 Glass Base, , Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M Felt, MB Base M, SBS Base, SBS PolyBase, or SBS Premium Base sheet fully adhered to the insulation with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Membrane: (Not with APP 80 Glass Base or) One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base,) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M Felt) One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following to obtain required fire classification.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design

Pressure: -67.5 psf (See General Limitation #9)

Membrane Type: SBS/APP
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(5): One or more layers of insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISOGARD HD		
Minimum ½" thick	N/A	N/A

Note: Insulation shall be adhered to the deck with I.S.O. Stick applied in ¾-1" ribbons spaced 12" o.c. or I.S.O. FIX II applied in ¾-1" ribbons spaced 4" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment

Base Sheet: One or more plies of Firestone SBS Base, SBS PolyBase, SBS Premium Base, MB Base M, APP 80 Glass Base or fully adhered to the insulation with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Membrane: (Not with APP 80 Glass Base or) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel in Multi-Purpose MB Cold Adhesive.
2. Roof Gravel in a flood coat of approved asphalt.

Maximum Design

Pressure: -67.5 psf (See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(6): One or more layers of insulation adhered with approved asphalt or adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL		
Minimum 1.5" thick	N/A	N/A
RESISTA (Not for use with TITESET / CR-20 Adhesive)		
Minimum 1.5" thick	N/A	N/A

Note: Base insulation layer shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². or with TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in 3-3½" ribbons spaced 12" o.c. or OlyBond 500 Adhesive or I.S.O. Stick in ¾-1" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
FiberTop E, Approved HD Wood Fiber Board		
Minimum ½" thick	N/A	N/A

Note: Top insulation layer shall be adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone Ply IV , Ply VI , Ply IV (4) M, or Ply VI (6) M felt fully adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft².

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch applied.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure: -97.5 psf (See General Limitation #9)



Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(7): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

Barrier: (Optional) One ply of Firestone MB Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the properly primed deck in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II Minimum 1.3" thick	N/A	N/A
ISO 95+ GL or RESISTA Minimum 1.4" thick	N/A	N/A
Approved Perlite Minimum ¾" thick	N/A	N/A
Approved High Density Wood Fiber Minimum ½" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Approved Perlite Minimum ¾" thick	N/A	N/A
Approved High Density Wood Fiber Minimum ½" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: One ply of Firestone MB Base, Firestone SBS Base, Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

- Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.
- Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".
- Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:
1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq.
 2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq.
- Maximum Design Pressure: -120 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(8): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Barrier: (Optional) One ply of Firestone MB Base, Firestone SBS Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the properly primed concrete deck with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II		
Minimum 1.3" thick	N/A	N/A
ISO 95+ GL or RESISTA		
Minimum 1.4" thick	N/A	N/A
Approved Perlite		
Minimum ¾" thick	N/A	N/A
Approved High Density Wood Fiber		
Minimum ½" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Approved Perlite		
Minimum ¾" thick	N/A	N/A
Approved High Density Wood Fiber		
Minimum ½" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: One ply of Firestone MB Base, Firestone SBS Base, Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of SBS Smooth or SBS Base Sheet, or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR or SBS Glass FR UltraWhite adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

–120 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated, New Construction or Reroof

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(9): All layers of insulation adhered with approved asphalt.

Vapor Barrier: (Optional) Two plies of Firestone Ply IV (4) M or Ply VI (6) M ply sheet adhered to the properly primed concrete deck with a full mopping of approved asphalt applied at a rate of 20-25 lbs./sq.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A
Middle Insulation Layer(Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Tapered ISO 95+ GL or RESISTA 1/2" start with 1/4" taper	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A
FiberTop E Minimum 1/2" thick	N/A	N/A
Approved Perlite Minimum 3/4" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt at a rate of 20-25 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Base Sheet: Two or more plies of Firestone MB Base M, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to top insulation layer with a full mopping of approved asphalt applied at a rate of 20-25 lbs./sq.

Membrane: One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite adhered in a full mopping of approved asphalt applied at a rate of 20-25 lbs./sq..

OR

(Not with MB Base M) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Only with Type IV and Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design
Pressure:

–120 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(10): All layers of insulation adhered with approved adhesive.

All General and System Limitations apply.

Vapor Barrier: (Optional) Firestone MB Base M base sheet adhered to primed concrete deck with I.S.O. Twin Pack Insulation Adhesive applied in ½” to ¾” wide ribbons spaced 12” o.c. or one ply of Firestone SBS Poly Torch Base or SBS Glass Torch Base sheet, torch applied.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5” thick	N/A	N/A
Middle Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5” thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck or DensDeck Prime Minimum ¼” thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier or insulation. All insulation shall be adhered to the deck with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾” wide ribbons spaced 12 in. o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Base Sheet: One or more plies of Firestone SBS Poly Torch Base or SBS Glass Torch Base sheet is torch adhered to the coverboard.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet with the 3” sidelaps heat fused with a torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Roof Gravel in Multi-Purpose MB Cold Adhesive
2. Roof Gravel in a flood coat of approved asphalt
3. Karnak 169 Aluminum Coating

Maximum Design Pressure: -127.5 psf (See General Limitation #9)



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Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(11): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck or DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt at a rate of 20-25 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone SBS Poly Torch Base or SBS Glass Torch Base sheet is torch adhered to the coverboard.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet with the 3" sidelaps heat fused with a torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Roof gravel at 400 lbs/sq in a flood coat of approved asphalt.
2. Roof Gravel in Multi-Purpose MB Cold Adhesive applied at 2.5 gal/sq.

Maximum Design Pressure: -127.5 psf (See General Limitation #9)

Membrane Type: APP/SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(12): One or more layers of insulation adhered with approved asphalt or adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL		
Minimum 1.5" thick	N/A	N/A
RESISTA (Not for use with TITE-SET / CR-20 Adhesive)		
Minimum 1.5" thick	N/A	N/A

Note: All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². or with TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 applied in 3-3½" ribbons spaced 12" o.c. or OlyBond 500 Adhesive or I.S.O. Stick in ¾-1" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone Ply IV , Ply VI , Ply IV (4) M or Ply VI (6) M felt fully adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft².

Membrane: One ply of Firestone SBS Premium FR Torch, SBS Premium FR Torch UltraWhite, APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR or APP 180 FR UltraWhite torch applied to the base sheet
OR
One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS Premium adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft².

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure: -150 psf with OlyBond 500 or I.S.O. Stick (See General Limitation #9)
-210 psf with Asphalt or TITE-SET or CR-20 (See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(13): All layers of insulation adhered with approved adhesive.

All General and System Limitations apply.

Vapor Barrier: Firestone MB Base M base sheet adhered to primed concrete deck with I.S.O. Twin Pack Insulation Adhesive applied in ½” to ¾” wide ribbons spaced 12” o.c. or one ply of Firestone SBS Poly Torch Base or SBS Glass Torch Base sheet, torch applied.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5” thick	N/A	N/A
Middle Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5” thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck or DensDeck Prime Minimum ¼” thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier. All insulation shall be adhered to the deck with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾” wide ribbons spaced 12 in. o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Base Sheet: One ply of Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch applied.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Roof Gravel in Multi-Purpose MB Cold Adhesive
2. Roof Gravel in a flood coat of approved asphalt
3. Karnak 169 Aluminum Coating

Maximum Design

Pressure: –232.5 psf (See General Limitation #9)



Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(14): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Vapor Barrier: Firestone MB Base M base sheet adhered to primed concrete deck with I.S.O. Twin Pack Insulation Adhesive applied in ½” to ¾” wide ribbons spaced 12” o.c. or one ply of Firestone SBS Poly Torch Base or SBS Glass Torch Base sheet, torch applied.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5” thick	N/A	N/A
Middle Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5” thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck or DensDeck Prime Minimum ¼” thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of vapor barrier. All insulation shall be adhered to the deck with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾” wide ribbons spaced 12 in. o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Base Sheet: A perforated ASTM D4897, Type II approved base sheet shall be laid over the top insulation layer prior to the application of the succeeding sheets.

Ply Sheet: One ply of Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet applied in a full mopping of approved asphalt applied at a rate of 20-25 lbs./sq.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch applied.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Roof Gravel in Multi-Purpose MB Cold Adhesive
2. Roof Gravel in a flood coat of approved asphalt
3. Karnak 169 Aluminum Coating

Maximum Design Pressure: -232.5 psf (See General Limitation #9)



Membrane Type: SBS
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(15): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Vapor Barrier: One ply of Firestone MB Base M, SBS Base, SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1” thick	N/A	N/A
Middle Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1” thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck or DensDeck Prime Minimum ¼” thick	N/A	N/A
ISOGARD HD Minimum ½” thick	N/A	N/A

Note: Base insulation shall be adhered to the deck with I.S.O. Twin Pack Insulation Adhesive or I.S.O. Stick applied in continuous ¾” – 1” wide ribbons spaced 12 in. o.c. Top insulation shall be adhered to the deck with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾” wide ribbons spaced 12 in. o.c. or with I.S.O. Stick applied in continuous ¾” – 1” wide ribbons spaced 12 in. o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Base Sheet: One or more plies of Firestone Ply IV (4) M, Ply VI (6) M, Or One ply of Firestone MB Base M, SBS Base, SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design
Pressure:

-240 psf (See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(16): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL, RESISTA or other Approved polyisocyanurate listed in Table 2		
Minimum ½" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Approved High Density Wood Fiber		
Minimum ½" thick	N/A	N/A
Approved Perlite		
Minimum ¾" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: One ply of Firestone MB Base, Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq.
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq.

Maximum Design Pressure:

- 255 psf (Perlite as top insulation layer) (See General Limitation #9)
- 520 psf (High Density Wood Fiberboard as top insulation layer) (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(17): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL, RESISTA or other Approved polyisocyanurate listed in Table 2		
Minimum ½” thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Approved High Density Wood Fiber		
Minimum ½” thick	N/A	N/A
Approved Perlite		
Minimum ¾” thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: One ply of Firestone MB Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of SBS Smooth, MB Base, Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet, SBS Base or other Approved base or ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR or SBS Glass FR UltraWhite adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design Pressure: –255 psf (Perlite as top insulation layer) (See General Limitation #9)
–520 psf (High Density Wood Fiberboard as top insulation layer)
(See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(18): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Minimum ¼" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: One ply of Firestone MB Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq.
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -225 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(19): One or more layers of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Minimum ¼" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. All insulation shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation panels used as a top layer shall be placed with the polyisocyanurate side facing down.

Base Sheet: One ply of Firestone MB Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of SBS Smooth, MB Base, Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet, SBS Base, or other Approved base or ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR or SBS Glass FR UltraWhite adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design

Pressure: -225 psf (See General Limitation #9)



Membrane Type: SBS
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(20): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1" thick	N/A	N/A
Middle Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Tapered ISO 95+ GL or RESISTA 1/2" start with 1/4" taper	N/A	N/A
ISO 95+ GL or RESISTA Minimum 1" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck or DensDeck Prime Minimum 1/4" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with LiquiGard Membrane Adhesive applied in continuous 3/4" – 1" wide ribbons spaced 12 in. o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Base Sheet: One or more plies of Firestone Ply IV (4) M, Ply VI (6) M, Or
One ply of Firestone MB Base M, SBS Base, SBS PolyBase, or SBS Premium
Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a
rate of 1.5 – 2 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap
UltraWhite, SBS Glass, SBS Premium, SBS Premium FR, SBS Premium FR
UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied
at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with
LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch
UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS
Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch
UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap
sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design
Pressure:

-255 psf (See General Limitation #9)

Membrane Type: SBS
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type A(21): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1" thick	N/A	N/A
Middle Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
Tapered ISO 95+ GL or RESISTA 1/2" start with 1/4" taper	N/A	N/A
ISO 95+ GL or RESISTA Minimum 1" thick	N/A	N/A
Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISOGARD HD Minimum 1/2" thick	N/A	N/A

Note: All insulation shall be adhered to the deck with LiquiGard Membrane Adhesive applied in continuous 3/4" – 1" wide ribbons spaced 12 in. o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment. Insulation listed as base layer only shall be used only as base layers with a second layer of approved top layer insulation installed as the final membrane substrate.

Base Sheet: One or more plies of Firestone Ply IV (4) M, Ply VI (6) M, or One ply of Firestone MB Base M, SBS Base, SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design
Pressure: -292.5 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(22): Insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL		
Minimum 2" thick	N/A	N/A
RESISTA (Not for use with TITE-SET / CR-20 Adhesive)		
Minimum 2" thick	N/A	N/A

Note: Base insulation layer shall be adhered to the deck with OlyBond at a rate of 1 gal/sq. or Insta-Stik, OlyBond 500, I.S.O. Stick, I.S.O. FIX II, I.S.O. Twin Pack Insulation Adhesive, Millennium One Step Foamable Adhesive or TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 in ribbons 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
SECUROCK Gypsum-Fiber Roof Board		
Minimum ¼" thick	N/A	N/A

Note: Top insulation layer shall be adhered with OlyBond at a rate of 1 gal/sq. or Insta-Stik, OlyBond 500, I.S.O. Stick, I.S.O. FIX II, I.S.O. Twin Pack Insulation Adhesive, Millennium One Step Foamable Adhesive or TITE-SET Roofing Adhesive or 3M Polyurethane Foam Insulation Adhesive CR-20 in ribbons 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Primer: (Optional) SECUROCK Gypsum-Fiber Roof Board may be primed with ASTM D41 asphalt primer and allowed to dry prior to application of base sheet

Base Sheet: One or more plies of Firestone SBS Glass Torch Base or SBS Poly Torch Base torch applied.

Membrane: One ply of Firestone SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch applied.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure: -540 psf with OlyBond (See General Limitation #9)

-442.5 psf with all other ribbon adhesives (See General Limitation #9)



Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type A(23): Insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 2" thick	N/A	N/A

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of insulation. Base insulation layer shall be adhered to the deck in full mopping of approved asphalt within the EVT range and at a rate of 25 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
SECUROCK Gypsum-Fiber Roof Board Minimum ¼" thick	N/A	N/A

Note: Top insulation layer shall be adhered in full mopping of approved asphalt within the EVT range and at a rate of 25 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Primer: (Optional) SECUROCK Gypsum-Fiber Roof Board may be primed with ASTM D41 asphalt primer and allowed to dry prior to application of base sheet

Base Sheet: One or more plies of Firestone SBS Glass Torch Base or SBS Poly Torch Base torch applied.

Membrane: One ply of Firestone SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch applied.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure: -532.5 psf (See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(1): Base layer of insulation mechanically attached, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL, RESISTA, Multi-Max-3 Minimum 1.3" thick	1, 2, 3, 7, 11 or 14	1:2.4 ft²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
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Any of the insulations listed for Base Layer, above.

Note: Optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of Firestone MB Base adhered to the insulation with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq.

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(2): Base layer of insulation mechanically attached, top layer adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL, RESISTA, Multi-Max-3 Minimum 1.3" thick	1, 2, 3, 7, 11 or 14	1:2.4 ft²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
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Any of the insulations listed for Base Layer, above.

Note: Optional top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Base Sheet: One ply of Firestone MB Base, Firestone SBS Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of SBS Smooth or SBS Base Sheet or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR or SBS Glass FR UltraWhite adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

–45 psf (See General Limitation #9)

Membrane Type:	SBS/APP
Deck Type 3I:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type B(3):	Base layer of insulation mechanically fastened, top layer of insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 2" thick	2 or 3 with 16	1:2 ft²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Prime Minimum ¼" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾" wide ribbons spaced 12 in. o.c. or I.S.O. FIX II or I.S.O. Stick applied in ¾" – 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet:	One ply of Firestone SBS Base, SBS PolyBase, SBS Premium Base or SBS Smooth fully adhered to the insulation with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.
Ply Sheet:	One ply of Firestone SBS Base, SBS PolyBase, SBS Premium Base or SBS Smooth fully adhered to the insulation with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.
Membrane:	One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to ply sheet with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq. OR One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to ply sheet with Multi-Purpose MB Cold Adhesive squeegee applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive (SBS roof covers)

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type:	SBS
Deck Type 3I:	Concrete Decks, Insulated
Deck Description:	2500 psi structural concrete or concrete plank
System Type B(4):	Base layer of insulation mechanically fastened, top layer of insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck or DensDeck Prime Minimum ½" thick	2 or 3 with 16	1:2 ft²
Middle Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Prime Minimum ¼" thick	N/A	N/A
FiberTop E Minimum ½" thick	N/A	N/A

Note: Insulation shall be adhered to the deck with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾" wide ribbons spaced 12 in. o.c. or with I.S.O. Stick or I.S.O. FIX II applied in ¾-1" ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment

System 1:

Base Sheet:	One ply of Firestone SBS Base, SBS Premium Base or SBS Smooth, Or One or more plies of Firestone Ply IV , Ply VI , Ply IV (4) M, or Ply VI (6) M felt fully adhered in full mopping of approved asphalt within the EVT range and at a rate of 20-25 lbs./sq..
Ply Sheet:	(Optional) One or more plies of Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq.
Membrane:	One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-25 lbs./sq.

OR

(Not with MB Base M) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered

OR

(Only when adhering to Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

System 2:

Base Sheet: One or more plies of Firestone SBS Poly Torch Base or SBS Glass Torch Base sheet, torch applied.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet with the 3” sidelaps heat fused with a torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel in Multi-Purpose MB Cold Adhesive
2. Roof Gravel in a flood coat of approved asphalt

Maximum Design

Pressure: -45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(5): Base layer of insulation mechanically fastened, top layer of insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	2 or 3 with 16	1:2.7 ft²
ISO 95+ GL or RESISTA Minimum 2" thick	2 or 3 with 16	1:4 ft²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer (Optional)	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Prime Minimum ¼" thick	N/A	N/A
ISOGARD HD Minimum ½" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with LiquiGard Membrane Adhesive applied in continuous ¾" – 1" wide ribbons spaced at a maximum 12 in. o.c. or applied with I.S.O. Twin Pack Insulation Adhesive applied in ½ - ¾" wide ribbons spaced 12 in. o.c. or I.S.O. FIX II or I.S.O. Stick applied in ¾" – 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone Ply IV M, Ply VI (6) M, MB Base M, SBS Base, SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design
Pressure:

-45 psf (See General Limitation #9)

Membrane Type: APP
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type B(6): Base layer of insulation mechanically fastened, top layer of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL, RESISTA, or any Approved Polyisocyanurate listed in Table 2		
Minimum 1.5" thick	1, 2 or 3	1:2 ft²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Approved Perlite		
Minimum ¾" thick	N/A	N/A
Approved High Density Wood Fiber		
Minimum ½" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Ply Sheet: One or more plies in any combination of the following: Firestone MB Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs/sq. or one ply Firestone APP 160-P torch applied.

Membrane: One ply of APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch applied parallel to the base ply, with overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -52.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(7): Base layer of insulation mechanically fastened, top layer of insulation adhered with approved asphalt.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2		
Minimum 1.5" thick	1, 2 or 3	1:2 ft²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Approved Perlite		
Minimum ¾" thick	N/A	N/A
Approved High Density Wood Fiber		
Minimum ½" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with approved hot asphalt within the EVT range and at a rate of 20-40 lbs/100 ft². Please refer to Roofing Application Standard RAS 117 for insulation attachment. Composite insulation boards used as a top layer shall be installed with the polyisocyanurate face down.

Ply Sheet: One or more plies in any combination of the following: Firestone MB Base, SBS Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet bonded to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR or SBS Glass FR UltraWhite adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

–52.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type B(8): Base layer of insulation mechanically fastened, top layer of insulation adhered with approved adhesive.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	2 or 3 with 16	1:1.6 ft²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A

Note: Top layer of insulation shall be adhered with LiquiGard Membrane Adhesive applied in continuous $\frac{3}{4}$ " – 1" wide ribbons spaced at a maximum 12 in. o.c. or applied with I.S.O. Twin Pack Insulation Adhesive applied in $\frac{1}{2}$ - $\frac{3}{4}$ " wide ribbons spaced 12 in. o.c. or I.S.O. FIX II or I.S.O. Stick applied in $\frac{3}{4}$ " – 1" wide ribbons spaced 12" o.c. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt.

Maximum Design
Pressure:

-75 psf (See General Limitation #7)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type C(1): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II		
Minimum 1.3" thick	N/A	N/A
ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL or RESISTA		
Minimum 1.4" thick	N/A	N/A
Multi-Max-3		
Minimum 1.5" thick	N/A	N/A
Approved Perlite		
Minimum ¾" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL, RESISTA, Multi-Max-3		
Minimum 1.3" thick	1, 7, 9, 11 or 14	1:2.4 ft ²
Approved Perlite		
Minimum ¾" thick	7, 11 or 14	1:3 ft ²
Approved High Density Wood Fiber		
Minimum ½" thick	7, 11 or 14	1:3 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone MB Base, adhered to the insulation with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq.

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type C(2): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II Minimum 1.3" thick	N/A	N/A
ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL or RESISTA Minimum 1.4" thick	N/A	N/A
Multi-Max-3 Minimum 1.5" thick	N/A	N/A
Approved Perlite Minimum ¾" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II, ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL, RESISTA, Multi-Max-3 Minimum 1.3" thick	1, 2, 3, 7, 9, 11 or 14	1:2.4 ft ²
Approved Perlite Minimum ¾" thick	7, 11 or 14	1:3 ft ²
Approved High Density Wood Fiber Minimum ½" thick	7, 11 or 14	1:3 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone MB Base, Firestone SBS Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the insulation in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of SBS Smooth or SBS Base Sheet or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.



- Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.
- OR
- (Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square
- OR
- One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered
- OR
- (Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.
- Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:
1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.
 2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.
- Maximum Design Pressure: –45 psf (See General Limitation #9)

Membrane Type: APP/SBS
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type C(3): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA Minimum 1.5" thick	2, 3, 7 or 17	1:2 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone SBS Base, SBS PolyBase, SBS Premium Base, SBS Smooth, APP 80 Glass Base or fully adhered to the insulation with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base or) One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type C(4): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Prime Minimum ¼" thick	2 or 3 with 16	1:4 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch applied.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type C(5): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ISO 95+ GL or RESISTA		
Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
DensDeck Prime		
Minimum ¼" thick	2 or 3 with 16	1:4 ft²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One ply of Firestone SBS Poly Torch Base sheet is torch adhered to the coverboard.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet with the 3" sidelaps heat fused with a torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: APP/SBS
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type C(6): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA Minimum 2" thick	2 or 3 with 16	1:1.33 ft ²

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone SBS Base, SBS PolyBase, SBS Smooth, SBS Premium Base, APP 80 Glass Base or fully adhered to the insulation with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with SBS Smooth, APP 80 Glass Base or) One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, torch adhered to the base sheet.

OR

(Not with SBS Smooth, APP 80 Glass Base or) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite or SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Glass, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive at a rate of 1½ - 2 gal/sq.

OR

(Not with APP 80 Glass Base,) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Not with APP 80 Glass Base or) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design
Pressure:

-52.5 psf (See General Limitation #7)

Membrane Type: SBS
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type C(7): All layers of insulation simultaneously attached.

All General and System Limitations apply.

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA		
Minimum 1.5" thick	2 or 3 with 16	1:1.8 ft ²
Minimum 1.5" thick	2 or 3 with 16	1:1.6 ft ²
Minimum 1.5" thick	2 or 3 with 16	1:1.3 ft ²
Minimum 1.5" thick	2 or 3 with 16	1:1 ft ²
Minimum 2" thick	2 or 3 with 16	1:1 ft ²

Note: Base layer shall be mechanically attached with fasteners and density described above. Insulation panels listed are minimum sizes and dimensions; if larger panels are used the number of fasteners per board shall be increased maintaining the same fastener density (See Roofing Application Standard RAS 117 for fastening details).

Base Sheet: One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Ply Sheet: (Optional) One ply of Firestone Ply IV (4) M, Ply VI (6) M, MB Base M, SBS Base, SBS PolyBase, or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design Pressure: -60 psf; 1.5" thick – at a fastener density of 1:1.8 ft² (See General Limitation #7)
-82.5 psf; 1.5" thick – at a fastener density of 1:1.6 ft² (See General Limitation #7)
-90 psf; 1.5" thick – at a fastener density of 1:1.3 ft² (See General Limitation #7)
-97.5 psf; 1.5" thick – at a fastener density of 1:1 ft² (See General Limitation #7)
-135 psf; 2" thick – at a fastener density of 1:1 ft² (See General Limitation #7)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type C(8): All layers of insulation simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A

Note: All layers shall be simultaneously fastened; see top layer below for fasteners and density. Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
DensDeck Prime Minimum ½" thick	1 or 2	See Below

Note: Insulation panels listed are minimum sizes and dimensions; if larger panels are used, the number of fasteners shall be increased maintaining the same fastener density. Please refer to Roofing Application Standard RAS 117 for insulation attachment.

Base Sheet: One or more plies of Firestone SBS Poly Torch Base Sheet or SBS Glass Torch Base base sheet is torch adhered to the insulation layer.

Membrane: One ply of Firestone SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the base sheet.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure:

- 97.5 psf at a fastener density of 1:1.33 ft² (See General Limitation #7)
- 127.5 psf at a fastener density of 1:1 ft² (See General Limitation #7)

Membrane Type: APP
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type D(1): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ACFoam-II		
Minimum 1.3" thick	N/A	N/A
ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL or RESISTA		
Minimum 1.4" thick	N/A	N/A
Multi-Max-3		
Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Approved High Density Wood Fiber		
Minimum ½" thick	N/A	N/A
Approved Perlite		
Minimum ¾" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base, MB Base M with a 4" side lap mechanically fastened through the insulation to the deck as described below:

Fastening: Approved Dekfast, Firestone, OMG, Tru-Fast, Roofgrip screws with metal plates or Firestone Concrete Drives at the side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of Firestone APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq.

Maximum Design Pressure: -45 psf (See General Limitation #9)



Membrane Type: SBS
Deck Type 3I: Concrete Decks, Insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type D(2): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base or Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
ACFoam-II		
Minimum 1.3" thick	N/A	N/A
ENRGY 3, ENRGY 3 25 PSI, ISO 95+ GL or RESISTA		
Minimum 1.4" thick	N/A	N/A
Multi-Max-3		
Minimum 1.5" thick	N/A	N/A
Top Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft²
Approved High Density Wood Fiber		
Minimum ½" thick	N/A	N/A
Approved Perlite		
Minimum ¾" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base, Firestone SBS Base with a 4" side lap mechanically fastened to the deck through the insulation as described below:

Fastening: Approved Dekfast, Firestone, OMG, Tru-Fast, Roofgrip screws with metal plates or Firestone Concrete Drives at the side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c.

Ply Sheet: (Optional) One or more plies of SBS Smooth, SBS Base Sheet, or Firestone Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design
Pressure:

–45 psf (See General Limitation #9)

Membrane Type: APP/SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type D(3): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Base Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base M mechanically fastened to the deck through the insulation with Firestone Heavy Duty Fasteners and Insulation Fastening Plates applied 12" o.c. through the 4" wide base sheet overlaps and 12" o.c. in 2 rows equally spaced and staggered in the field of the base sheet.

OR

One ply of Firestone SBS PolyBase mechanically fastened to the deck through the insulation with Firestone All-Purpose or Heavy Duty Fasteners and 2" Barbed Seam Metal Plates applied 12" o.c. through the 4" wide base sheet overlaps

Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.

OR

(Not with MB Base M) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design
Pressure:

-45 psf (See General Limitation #9)

Membrane Type: APP

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type D(4): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2		
Minimum 1.5" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base or MB Base M with a 4" side lap mechanically fastened through the insulation to the deck with Firestone Heavy-Duty fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type D(5): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

ONE OR MORE LAYERS OF ANY OF THE FOLLOWING INSULATIONS:

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL, RESISTA or any Approved Polyisocyanurate listed in Table 2		
Minimum 1.5" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base/anchor sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base or MB Base M with a 4" side lap mechanically fastened through the insulation to the deck with Firestone Heavy-Duty fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, SBS Base, Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base or ply sheet mopped in approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base,) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type D(6): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone MB Base M with a 4" side lap mechanically fastened through the insulation to the deck with Firestone Heavy-Duty fasteners and plated or Firestone Concrete Drives at a spacing of 12" o.c. within the 4" side lap and two staggered rows, equally spaced in the center of the sheet, 12" o.c.

Ply Sheet: One or more plies Firestone SBS Glass Torch Base or SBS Poly Torch Base torch applied to the base sheet with the 3" side laps are heat fused with a torch.

Membrane: Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch applied to the ply sheet. Minimum 3" side laps are heat fused with torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 3I: Concrete Decks, Insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type D(7): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

One or more layers of any of the following insulations:

Insulation Layer	Insulation Fasteners (Table 3)	Fastener Density/ft ²
ISO 95+ GL or RESISTA Minimum 1.5" thick	N/A	N/A

Note: Top layer shall have preliminary attachment, prior to the installation of the base sheet, at a minimum application rate of two fasteners per board for insulation boards having no dimension greater than 4 ft., and four fasteners for any insulation board having no dimension greater than 8 ft. All layers of insulation and base sheet shall be simultaneously fastened. See base/anchor sheet below for fasteners and density.

Base Sheet: One ply of Firestone SBS Poly Torch Base Sheet with a 4" side lap mechanically fastened through the insulation to the deck with Firestone Heavy-Duty fasteners or Firestone Concrete Drives and Insulation Fastening Plates at a spacing of 12" o.c. within the 4" side lap and two staggered rows, equally spaced in the center of the sheet, 12" o.c.

Ply Sheet: One ply Firestone SBS Poly Torch Base Sheet torch applied to the base sheet with the 3" side laps are heat fused with a torch.

Membrane: One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3" side laps heat fused with a torch.

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof gravel at 400 lb/sq in a flood coat of approved asphalt.
2. Roof gravel in Multi-Purpose MB Cold Adhesive at 2.5 gal/sq

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

Membrane Type: APP

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type E(1): Base sheet mechanically attached.

All General and System Limitations apply.

Base Sheet: One ply of Firestone MB Base, MB Base M, Firestone SBS Base with a 4" side lap mechanically fastened to the deck as described below:

Fastening: Fasten base sheet with Dekfast #14, 15 HS, OMG #14 screws and metal or plastic plates at a 4" side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c..

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq.
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq.

Maximum Design Pressure: -45 psf (See General Limitation #9)

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type E(2): Base sheet mechanically attached.

All General and System Limitations apply.

Base Sheet: One ply of Firestone MB Base, MB Base M, SBS Base with a 4" side lap mechanically fastened to the deck as described below:

Fastening: Fasten base sheet with Dekfast #14, 15 HS, OMG #14 screws and metal or plastic plates at a 4" side lap 18" o.c. and two rows staggered in the center of the sheet 36" o.c.

Ply Sheet: (Optional) One or more plies of SBS Smooth, SBS Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered.

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq.
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq..

Maximum Design Pressure:

–45 psf (See General Limitation #9)



Membrane Type: APP

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type E(3): Base sheet mechanically attached.

All General and System Limitations apply.

Base Sheet: One ply of Firestone MB Base or MB Base M with a 4" side lap mechanically fastened through the insulation to the deck with Firestone Heavy-Duty fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -82.5 psf (See General Limitation #7)

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type E(4): All layers of insulation and base sheet simultaneously attached.

All General and System Limitations apply.

Base Sheet: One ply of Firestone MB Base or MB Base M with a 4" side lap mechanically fastened through the insulation to the deck with Firestone Heavy-Duty fasteners or Firestone Concrete Drives or other Approved concrete deck fasteners at a spacing of 12" o.c. in the 4" side lap and two rows staggered in the center of the sheet, 12" o.c.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, SBS Base, Ply IV, Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base or ply sheet mopped in approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Smooth, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered.

OR

(Not with SBS Base,) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design Pressure:

–82.5 psf (See General Limitation #7)

Membrane Type: APP

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(1): Base sheet adhered with approved adhesive.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: One or more plies of Firestone APP 80 Glass Base or fully adhered to the deck with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Membrane: One ply of Firestone APP 170 Cool, APP 180 Cool, or APP 180 FR Cool fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure: -127.5 psf (See General Limitation #9.)

Membrane Type: APP/SBS

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(2): Base sheet adhered with approved adhesive.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: One or more plies of Firestone SBS Base, SBS PolyBase or SBS Premium Base sheet fully adhered to the deck with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Smooth, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.
OR
One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite torch adhered to the base sheet.
OR
One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.
OR
One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq.

(Maximum Design Pressure -180 psf; See General Limitation #9)

One ply of Firestone APP 170 Cool, APP 180 Cool, or APP 180 FR Cool cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

(Maximum Design Pressure -225 psf; See General Limitation #9)

Surfacing: (Optional) Install one of the following to obtain required fire classification. Any coating, listed below, used as a surfacing, must be listed within a current NOA.

1. Gravel or slag at 400 lbs/sq or 300 lbs/sq, respectively, in a flood coat of approved asphalt at 60 lbs/sq.
2. Karnak 97 Fibrated Aluminum Asphalt Roof Coating or Asbestos Free Aluminum Roof Coating at 1½ gal/sq.

Maximum Design Pressure: See membrane options above

Membrane Type: SBS
Deck Type 3: Concrete Decks, Non-insulated
Deck Description: 2500 psi structural concrete or concrete plank
System Type F(3): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Base Sheet: One or more plies of Firestone Ply IV (4) M, Ply VI (6) M are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3” side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design Pressure: -495 psf (See General Limitation #9.)

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(4): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Base Sheet: One ply of Firestone MB Base M, SBS Base, SBS PolyBase or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Ply Sheet: (Optional) One or more plies of Firestone Ply IV (4) M, Ply VI (6) M or one ply of Firestone MB Base M, SBS Base, SBS PolyBase or SBS Premium Base are fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

Membrane: Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite is fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite cap sheet torch adhered to the ply sheet with the 3” side laps heat fused with a torch.

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered to the base sheet with hot asphalt adhesive applied within the EVT range and at a rate of 20-40 lbs./sq

OR

(Only with Type IV or Type VI felts) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq

Surfacing: (Optional) Install one of the following to obtain required fire classification.

1. Roof Gravel at 400 lb/sq in a flood coat of approved asphalt

Maximum Design Pressure: -495 psf (See General Limitation #9.)

Membrane Type: APP

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(5): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: One ply of Firestone MB Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the properly primed deck in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, in a flood coat of approved asphalt at an application rate of 60 lb./sq..
2. Karnak No. 97, No. 97 AF or No. 169, or APOC #212 at an application rate of 1½ gal./sq..

Maximum Design Pressure: -522.5 psf (See General Limitation #9.)

Membrane Type: SBS

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(6): Base sheet adhered with approved asphalt.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: One ply of Firestone MB Base, SBS Base or Firestone Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet adhered to the properly primed concrete deck with a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet, SBS Smooth, SBS Base, or other Approved base or ply sheet adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq..

Membrane: One ply of Firestone SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite, SBS Glass, adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.

OR

(Not with MB Base) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR, SBS Premium FR UltraWhite fully adhered with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square. The minimum 3 in. wide side laps are sealed with LiquiGard Membrane Adhesive squeegee applied at a rate of 1.5 – 2 gal/square

OR

One ply of Firestone SBS Torch, SBS Torch UltraWhite, SBS FR Torch, SBS FR Torch UltraWhite, SBS Glass FR Torch, SBS Glass FR Torch UltraWhite, SBS Premium Torch, SBS Premium Torch UltraWhite, SBS Premium FR Torch or SBS Premium FR Torch UltraWhite, torch adhered

OR

(Not with SBS Base, SBS Smooth) One ply of Firestone SBS Smooth, SBS Cap, SBS Cap UltraWhite, SBS FR Cap, SBS FR Cap UltraWhite, SBS Glass, SBS Glass FR, SBS Glass FR UltraWhite, SBS Premium, SBS Premium FR or SBS Premium FR UltraWhite cap sheet fully adhered to the base sheet with Multi-Purpose MB Cold Adhesive applied at 1½ - 2 gal/sq.

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design Pressure:

-547.5 psf (See General Limitation #9.)



Membrane Type: APP

Deck Type 3: Concrete Decks, Non-insulated

Deck Description: 2500 psi structural concrete or concrete plank

System Type F(7): Base sheet adhered.

All General and System Limitations apply.

Note: Concrete deck shall be primed with ASTM D 41 asphalt primer and allowed to dry prior to application of base sheet.

Base Sheet: One ply of APP 160-P applied by torch parallel to the base ply, with the overlaps staggered 12".

Ply Sheet: (Optional) One or more plies of Firestone MB Base, Ply IV , Ply IV (4) M, Ply VI or Ply VI (6) M ply sheet or other listed base sheet applied in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq.; or one ply Firestone APP 160-P torch applied.

Membrane: One ply of APP 180, APP 180-P, APP 180 UltraWhite, APP 180 FR, APP 180 FR UltraWhite, applied by torch parallel to the base ply, with the overlaps staggered 12".

Surfacing: (Optional) Any coating, listed below, used as a surfacing, must be listed within a current NOA. Install one of the following:

1. Gravel or slag at 400 lb. and 300 lb., respectively, set in a flood coat of type III or IV asphalt at 60 lb./sq..
2. Karnak No. 97, No. 97 AF at an application rate of 1½ gal./sq.

Maximum Design Pressure: -312.5 psf (See General Limitation #9.)

CONCRETE DECK SYSTEM LIMITATIONS:

1. If mechanical attachment to the structural deck through the lightweight insulating concrete is proposed, a field withdrawal resistance testing shall be performed to determine equivalent or enhanced fastener patterns and density. All testing and fastening design shall be in compliance with Testing Application Standard TAS 105 and Roofing Application Standard RAS 117, calculations shall be signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant.

GENERAL LIMITATIONS:

1. Fire classification is not part of this acceptance, refer to a current Approved Roofing Materials Directory for fire ratings of this product.
2. Insulation may be installed in multiple layers. The first layer shall be attached in compliance with Product Control Approval guidelines. All other layers shall be adhered in a full mopping of approved asphalt applied within the EVT range and at a rate of 20-40 lbs./sq., or mechanically attached using the fastening pattern of the top layer
3. All standard panel sizes are acceptable for mechanical attachment. When applied in approved asphalt, panel size shall be 4' x 4' maximum.
4. An overlay and/or recovery board insulation panel is required on all applications over closed cell foam insulations when the base sheet is fully mopped. If no recovery board is used the base sheet shall be applied using spot mopping with approved asphalt, 12" diameter circles, 24" o.c.; or strip mopped 8" ribbons in three rows, one at each sidelap and one down the center of the sheet allowing a continuous area of ventilation. Encircling of the strips is not acceptable. A 6" break shall be placed every 12' in each ribbon to allow cross ventilation. Asphalt application of either system shall be at a minimum rate of 12 lbs./sq. **Note: Spot attached systems shall be limited to a maximum design pressure of -45 psf.**
5. Fastener spacing for insulation attachment is based on a Minimum Characteristic Force (F') value of 275 lbf., as tested in compliance with Testing Application Standard TAS 105. If the fastener value, as field-tested, are below 275 lbf. insulation attachment shall not be acceptable.
6. Fastener spacing for mechanical attachment of anchor/base sheet or membrane attachment is based on a minimum fastener resistance value in conjunction with the maximum design value listed within a specific system. Should the fastener resistance be less than that required, as determined by the Building Official, a revised fastener spacing, prepared, signed and sealed by a Florida Registered Engineer, Architect, or Registered Roof Consultant may be submitted. Said revised fastener spacing shall utilize the withdrawal resistance value taken from Testing Application Standards TAS 105 and calculations in compliance with Roofing Application Standard RAS 117.
7. Perimeter and corner areas shall comply with the enhanced uplift pressure requirements of these areas. Fastener densities shall be increased for both insulation and base sheet as calculated in compliance with Roofing Application Standard RAS 117. Calculations prepared, signed and sealed by a Florida registered Professional Engineer, Registered Architect, or Registered Roof Consultant **(When this limitation is specifically referred within this NOA, General Limitation #9 will not be applicable.)**
8. All attachment and sizing of perimeter nailers, metal profile, and/or flashing termination designs shall conform with Roofing Application Standard RAS 111 and applicable wind load requirements.
9. The maximum designed pressure limitation listed shall be applicable to all roof pressure zones (i.e. field, perimeters, and corners). Neither rational analysis, nor extrapolation shall be permitted for enhanced fastening at enhanced pressure zones (i.e. perimeters, extended corners and corners). **(When this limitation is specifically referred within this NOA, General Limitation #7 will not be applicable.)**
10. All products listed herein shall have a quality assurance audit in accordance with the Florida Building Code and Rule 9N-3 of the Florida Administrative Code.

END OF THIS ACCEPTANCE



NOA No.: 11-0119.11
Expiration Date: 03/08/16
Approval Date: 04/25/13
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